
PART C
PERSONAL PROTECTIVE AND LIFE SAVING EQUIPMENT

WAC 296-155-200 General requirements.

- (1) Application.
 - (a) Protective equipment, including personal protective equipment for eyes, face, head, hearing, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.
 - (b) Employee owned equipment. Where employees provide their own protective equipment, the employer shall be responsible to assure its adequacy, including proper maintenance and sanitation of such equipment.
 - (c) Design. All personal protective equipment shall be of safe design and construction for the work to be performed.
- (2) Construction personnel shall comply with plant or job safety practices and procedures, peculiar to particular industries and plants, relating to protective equipment and procedures when engaged in construction work in such plants or job sites.
- (3) The employer is responsible for requiring the wearing of appropriate personal protective equipment in all operations where there is an exposure to hazardous conditions or where this part indicates a need for using such equipment to reduce the hazards to the employees.
- (4) Where there is a danger of contact with moving parts of machinery, or the work process is such that a hazard exists:
 - (a) The clothing of employees shall fit closely about the body.
 - (b) Dangling neck wear, bracelets, wristwatches, rings, or similar articles shall not be worn by employees.
- (5) Employees, whose duties are performed in areas and under circumstances where they are exposed to the danger of moving vehicles, shall wear work vests of highly visible materials, or equivalent distinguishing apparel.
- (6) Employers shall ensure that employees wear no less than a short sleeved shirt, long pants, and shoes. Employees shall wear no less than a short sleeved shirt, long pants, and shoes. Shoes shall meet the requirements of WAC 296-155-212.

Note: For additional personal protective and life saving equipment requirements, refer to WAC 296-800-160.
[Statutory Authority: RCW 49.17.010, .040, .050. 01-11-038 (Order 99-36), § 296-155-200, filed 05/09/01, effective 09/01/01.
Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-200, filed 7/20/94, effective 9/20/94. Statutory
Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-200, filed 1/21/86; Order 76-29, § 296-155-200,
filed 9/30/76; Order 74-26, § 296-155-200, filed 5/7/74, effective 6/6/74.]

WAC 296-155-201 Definitions applicable to this chapter.

- (1) **“Catenary life line”** means a horizontal rope between two fixed anchorages, independent of the work surface, to which the lanyard is attached, either by tying or by means of a sliding connection. A catenary life line shall be capable of supporting a minimum dead weight of 5,400 pounds per person, applied at the midpoint of the line.
- (2) **“Contaminant”** means any material which by reason of its action upon, within, or to a person or object is likely to cause physical harm.
- (3) **“Dropline”** means a vertical rope from a fixed anchorage, independent of the work surface, to which the lanyard is affixed or tied.
- (4) **“Fixed anchorage”** means a secure point of attachment, not a part of the work surface, for droplines, lifelines, catenary life lines, or lanyards. The fixed anchorage and its appurtenances shall be capable of supporting a minimum dead weight of 5,400 pounds per worker.
- (5) **“Lanyard”** means a rope, suitable for supporting one person. One end is fastened to a safety belt or harness and the other end is secured to a substantial object or a safety line.
- (6) **“Lifeline”** means a rope, suitable for supporting one person, to which a lanyard or safety belt (or harness) is attached.
- (7) **“O.D.”** means optical density and refers to the light refractive characteristics of a lens.
- (8) **“Radiant energy”** means energy that travels outward in all directions from its source.
- (9) **“Safety belt”** means a device, usually worn around the waist which, by reason of its attachment to a lanyard and lifeline or a structure, will prevent a worker from falling.

[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-201, filed 1/21/86; Order 76-6, § 296-155-201, filed 3/1/76.]

WAC 296-155-203 Confined spaces. All work conducted in a confined space shall comply with the provisions of chapter 296-62 WAC Part M, and the following sections.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-203, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-203, filed 1/21/86.]

WAC 296-155-20301 Definitions. **“Confined space”** means a space that:

- (1) Is large enough and so configured that an employee can bodily enter and perform assigned work; and
- (2) Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and
- (3) Is not designed for continuous employee occupancy.

“Corrosives” means substances which in contact with living tissue cause destruction of the tissue by chemical action.

“Hazardous atmosphere” means an atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:

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- (1) Flammable gas, vapor, or mist in excess of ten percent of its lower flammable limit (LFL);
- (2) Airborne combustible dust at a concentration that meets or exceeds its LFL;

Note: This concentration may be approximated as a condition in which the dust obscures vision at a distance of five feet (1.52m) or less.

- (3) Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
- (4) Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in chapter 296-62 WAC, general occupational health standards, and which could result in employee exposure in excess of its dose or permissible exposure limit;

Note: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this provision.

- (5) Any other atmospheric condition that is immediately dangerous to life or health.

Note: For air contaminants for which WISHA has not determined a dose or permissible exposure limit, other sources of information, such as material safety data sheets that comply with the chemical hazard communication standard, WAC 296-800-170, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.

“Irritants” means substances which on immediate, prolonged, or repeated contact with normal living tissue will induce a local inflammatory reaction.

“Oxygen deficient atmospheres” means atmospheres at sea level having less than 19.5% oxygen by volume or having a partial pressure of 148 millimeters of mercury or less. This may deviate when working at higher altitudes and should be determined for an individual location. Factors such as acclimatization, physical condition of persons involved, etc., must be considered for such circumstances and conditions. (See chapter 296-62 WAC, Part M, permit-required confined spaces.)

“Toxicants” means substances which have the inherent capacity to produce personal injury or illness to persons by absorption through any body surface.

[Statutory Authority: RCW 49.17.010, .040, .050. 01-11-038 (Order 99-36), § 296-155-20301, filed 05/09/01, effective 09/01/01. Statutory Authority: Chapter 49.17 RCW. 95-17-036 (Order 95-04), 296-155-20301, filed 8/9/95, effective 9/25/95; 95-04-007, § 296-155-20301, filed 1/18/95, effective 3/1/95; 91-24-017 (Order 91-07), § 296-155-20301, filed 11/22/91, effective 12/24/91. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-20301, filed 1/21/86.]

WAC 296-155-20307 Confined space work on sewer systems under construction. New systems under construction or new installations which have not yet been connected to a used system, may substitute forced ventilation for the testing requirements of chapter 296-62 WAC Part M provided:

- (1) Ventilation is effectively provided at least five minutes prior to entry into the confined space;
- (2) Ventilation is provided, as required by WAC 296-62-110, et seq., which supplies a continuous flow of air;
- (3) Ventilation exhaust is discharged so as to present no hazard to other employees;

WAC 296-155-20307 (Cont.)

- (4) An attendant is provided at the surface when there are employees in the manhole or pipe. The attendant shall not leave the manhole unattended until such time as all employees are out and the cover has been replaced; and
- (5) All other requirements for confined spaces are observed. See chapter 296-62 WAC Part M.
[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-20307, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-20307, filed 1/21/86.]

WAC 296-155-205 Head protection.

- (1) All employees on any construction site shall be provided an individual hard hat which meets all requirements of (a) and (b) of this subsection. Employers shall provide individual hard hats at no cost to the employees.
- (a) Hard hats for the protection of employees against impact and/or penetration of falling and flying objects shall meet the specifications contained in American National Standards Institute, Z89.1-1969, Safety Requirements for Industrial Head Protection.
- (b) Hard hats for the head protection of employees exposed to high voltage electrical shock and burns shall meet the specifications contained in American National Standards Institute, Z89.2-1971.
- (2) All employees must have their individual hard hats on site and readily available at all times.
- (3) All employees shall wear a hard hat on any construction site whenever there is a potential exposure to danger of flying or falling objects to persons working or occupying the area.

Note: The hard hat may be removed whenever there is no potential exposure to a hazard.

- (4) (a) Employees working on asphalt paving crews exposed to extreme temperatures from hot mix and not exposed to falling objects do not have to wear protective hard hats.
- (b) Flaggers working with asphalt paving operations must comply with the requirements of WAC 296-155-305.
- (5) Caps with metal buttons or metal visors shall not be worn around electrical hazards.
- (6) Employees working near moving machinery or in locations which present a hair-catching or fire hazard shall wear caps, nets or other head and face protection that will completely contain the hair.

[Statutory Authority: RCW 49.17.010, .040, .050; Chapter 239, Laws of 2000 (ESHB 2647); and Chapter 34.05 RCW. 01-04-015 (Order 00-03), § 296-155-205, filed 01/26/01, effective 02/28/01. Statutory Authority: Chapter 49.17 RCW. 91-11-070 (Order 91-01), § 296-155-205, filed 5/20/91, effective 6/20/91; 89-11-035 (Order 89-03), § 296-155-205, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-205, filed 1/21/86; Order 74-26, § 296-155-205, filed 5/7/74, effective 6/6/74.]

WAC 296-155-210 Hearing protection. The hearing protection requirements of chapter 296-817 WAC, Hearing loss prevention (noise), apply.
Statutory Authority: RCW 49.17.010, .040, .050, and .060. 03-11-060 (Order 02-16), § 296-155-210, filed 05/19/03, effective 08/01/03. Statutory Authority: RCW 49.17.040 and 49.17.050. 83-24-013 (Order 83-34), § 296-155-210, filed 11/30/83; Order 74-26, § 296-155-210, filed 5/7/74, effective 6/6/74.]

WAC 296-155-211 Leg protection. Employees whose duties require them to operate a power chain saw shall wear flexible ballistic nylon pads, sewn or otherwise fastened into the trousers, or other equivalent protection that will protect the vulnerable areas of the legs.
[Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-211, filed 1/21/86.]

WAC 296-155-212 Foot protection.

- (1) Substantial footwear, made of leather or other equally firm material, shall be worn by employees in any occupation in which there is a danger of injury to the feet through falling or moving objects, or from burning, scalding, cutting, penetration, or like hazard.
 - (a) The soles and heels of such footwear shall be of a material that will not create a slipping hazard.
 - (b) Shoes made of leather or other firm materials that have soft athletic-type soles which would protect employees from foot injuries and at the same time, provide soft and firm footing while working under specialty requirements or with specialty materials are acceptable if meeting safety shoe requirements established by OSHA or ANSI.
 - (c) Footwear that has deteriorated to a point where it does not provide the required protection shall not be used.
- (2) Calks or other suitable footwear, which will afford reasonable protection from slipping, shall be worn while working on logs, poles, pilings, or similar forest products.
- (3) Traditional tennis shoes, shoes with canvas tops, or thin or soft soled athletic shoes, open toed sandals, slippers, dress shoes or other similar type shoes shall not be worn. Soft or athletic-type soles with uppers of leather or other substantial material may be used where firm footing is desired and where minimal danger of injury to feet from falling or moving objects.

- (4) Safety-toe footwear for employees shall meet the requirements and specifications in American National Standard for Men's Safety-Toe Footwear, Z41.1-1967.

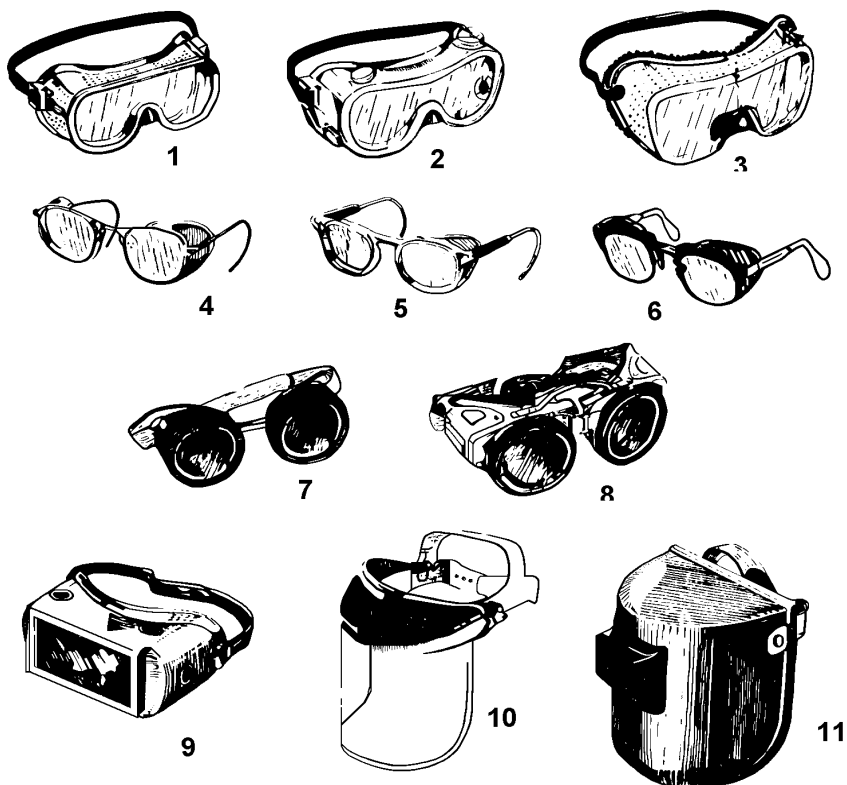
[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-212, filed 7/20/94, effective 9/20/94; 89-11-035 (Order 89-03), § 296-155-212, filed 5/15/89, effective 6/30/89. Statutory Authority: RCW 49.17.040 and 49.17.050. 86-03-074 (Order 86-14), § 296-155-212, filed 1/21/86; Order 74-26, § 296-155-212, filed 5/7/74, effective 6/6/74.]

WAC 296-155-215 Eye and face protection.

- (1) General.
 - (a) Employees shall use eye and face protection equipment when machines or operations present potential eye or face injury from physical, chemical, or radiation agents.
 - (b) Eye and face protection equipment required by this part shall meet the requirements specified in American National Standards Institute, Z87.1-1968, Practice for Occupational and Educational Eye and Face Protection.
 - (c) Employees whose vision requires the use of corrective lenses in spectacles, when required by this regulation to wear eye protection, shall be protected by goggles or spectacles of one of the following types:
 - (i) Spectacles whose protective lenses provide optical correction;
 - (ii) Goggles that can be worn over corrective spectacles without disturbing the adjustment of the spectacles.
 - (iii) Goggles that incorporate corrective lenses mounted behind the protective lenses.
 - (d) Face and eye protection equipment shall be kept clean and in good repair. The use of this type equipment with structural or optical defects shall be prohibited.

WAC 296-155-215 (Cont.)

- (e) Table C-1 shall be used as a guide in the selection of face and eye protection for the hazards and operations noted.
- (f) Protectors shall meet the following minimum requirements:
 - (i) They shall provide adequate protection against the particular hazards for which they are designed.
 - (ii) They shall be reasonably comfortable when worn under the designated conditions.
 - (iii) They shall fit snugly and shall not unduly interfere with the movements of the wearer.
 - (iv) They shall be durable.
 - (v) They shall be capable of being disinfected.
 - (vi) They shall be easily cleanable.
- (g) Every protector shall be distinctly marked to facilitate identification only of the manufacturer.
- (h) When limitations or precautions are indicated by the manufacturer, they shall be transmitted to the user and care taken to see that such limitations and precautions are strictly observed.



WAC 296-155-215 (Cont.)

**TABLE C-1
EYE AND FACE PROTECTION SELECTION GUIDE**

1.	GOGGLES, flexible fitting, regular ventilation
2.	GOGGLES, flexible fitting, hooded ventilation
3.	GOGGLES, cushioned fitting, rigid body
*4.	SPECTACLES, metal frame, with sideshields
*5.	SPECTACLES, plastic frame with sideshields
*6.	SPECTACLES, metal-plastic frame, with sideshields
**7.	WELDING GOGGLES, eyecup type, tinted lenses (illustrated)
7A.	CHIPPING GOGGLES, eyecup type, clear safety lenses (not illustrated)
**8.	WELDING GOGGLES, coverspec type tinted lenses (illustrated)
8A.	CHIPPING GOGGLES, coverspec type, clear safety lenses (not illustrated)
**9.	WELDING GOGGLES, coverspec type, tinted plate lens
10.	FACE SHIELD (available with plastic or mesh window)
11.	WELDING HELMETS
*	Nonside shield spectacles are available for limited hazard use requiring only frontal protection.
**	See Table C-2 in (2) of this section, Filter lens shade numbers for protection against radiant energy.

Applications

OPERATION	HAZARDS	RECOMMENDED PROTECTORS: Underscored Numbers Signify Preferred Protection
ACETYLENE-BURNING ACETYLENE-CUTTING ACETYLENE-WELDING	SPARKS, HARMFUL RAYS, MOLTEN METAL, FLYING PARTICLES	<u>7,8,9</u>
CHEMICAL HANDLING	SPLASH, ACID BURNS, FUMES	<u>2</u> ,10 (for severe exposure and <u>10</u> over 2)
CHIPPING ELECTRIC (ARC) WELDING	FLYING PARTICLES SPARKS, INTENSE RAYS, MOULTEN METAL	<u>1,3,4,5,6,7A, 8A</u> <u>9,11</u> (<u>11</u> in combination with 4,5,6 in tinted lenses, advisable)
FURNACE OPERATIONS	GLARE, HEAT MOLTEN METAL	<u>7,8,9</u> (for severe exposure add <u>10</u>)

WAC 296-155-215 (Cont.)

Applications (Cont.)

GRINDING LIGHT	FLYING PARTICLES	<u>1,3,4,5,6,10</u>
GRINDING HEAVE	FLYING PARTICLES	<u>1,3,7A, 8A</u> (for severe exposure add 10)
LABORATORY	CHEMICAL SPLASH GLASS BREAKAGE	<u>2</u> (10 when in combination with <u>4,5,6</u>)
MACHINING	FLYING PARTICLES	<u>1,3,4,5,6,10</u>
MOLTEN METALS	HEAT, GLARE SPARKS, SPLASH	<u>7,8</u> (10 in combination with <u>4,5,6</u> , in tinted lenses)
SPOT WELDING	FLYING PARTICLES SPARKS	<u>1,3,4,5,6,10</u>

- (2) Protection against radiant energy. (a) Selection of shade numbers for welding filter. Table C-2 shall be used as a guide for the selection of the proper shade numbers of filter lenses or plates used in welding. Shades more dense than those listed may be used to suit the individual's needs.

**TABLE C-2
FILTER LENS SHADE NUMBERS FOR PROTECTION AGAINST RADIANT ENERGY**

Welding Operation	Shade Number
Shielded metal-arc welding 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes	10
Gas-shielded arc welding (nonferrous) 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes	11
Gas shielded arc welding (ferrous) 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes	12
Shielded metal-arc welding 3/16-, 7/32-, 1/4-inch diameter electrodes	12
5/15-, 3/8-inch diameter electrodes	14
Atomic hydrogen welding	10-14
Carbon-arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1 inch to 6 inches	4 or 5
Heavy cutting, over 6 inches	5 or 6
Gas welding (light), up to 1/8 inch	4 or 5
Gas welding (medium), 1/8 inch to 1/2 inch	5 or 6
Gas welding (heavy), over 1/2 inch	6 or 9

WAC 296-155-215 (Cont.)

- (b) Laser protection.
- (i) Employees whose occupation or assignment requires potentially hazardous exposure (see WAC 296-62-09005(4)) to laser radiation shall wear suitable laser safety goggles which will protect for the specific wavelength of the laser and be of optical density (O.D.) adequate for the energy involved. Table C-3 lists the maximum power or energy density for which adequate protection is afforded by glasses of optical densities from 5 through 8.

**TABLE C-3
SELECTING LASER SAFETY GLASS**

INTENSITY		ATTENUATION
CW maximum power density (watts/cm ²)	Optical Density (O.D.)	Attenuation factor
10.2	5	105
10.1	6	106
1.0	7	107
10.0	8	108

Output levels falling between lines in this table shall require the higher optical density.

- (ii) All protective goggles shall bear a label identifying the following data:
- (a) The laser wavelengths for which use is intended;
- (b) The optical density of those wavelengths.
- (c) The visible light transmission.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-215, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. 85-01-022 (Order 84-24), § 296-155-215, filed 12/11/84; Order 74-26, § 296-155-215, filed 5/7/74, effective 6/6/74.]

WAC 296-155-220 Respiratory protection. The respiratory protection requirements applicable to construction work under this section are identical to those set forth in chapter 296-62 WAC, Part E.

[Statutory Authority: RCW 49.17.010, .040, .050. 99-10 (Order 98-10), § 296-155-220, filed 05/04/99, effective 09/01/99. Statutory Authority: RCW 49.17.040 and 49.17.050. 83-15-017 (Order 83-19), § 296-155-220, filed 7/13/83, effective 9/12/83; Order 74-26, § 296-155-220, filed 5/7/74, effective 6/6/74.]

WAC 296-155-235 Working over or adjacent to water.

- (1) When an employee is employed under conditions which expose them to a risk of drowning, they shall wear a U.S. Coast Guard approved life saving device, unless it can be shown that conditions, such as shallow water, are such that flotation would not be achieved.
- (2) Prior to and after each use, the buoyant life saving device shall be inspected for defects which would alter their strength or buoyancy. Defective units shall not be used.
- (3) Ring buoys with at least 90 feet of line shall be provided and readily available for emergency rescue operations. Distance between ring buoys shall not exceed 200 feet.

WAC 296-155-235 (Cont.)

- (4) At least one lifesaving skiff shall be immediately available at locations where employees are working over or adjacent to water. Each skiff, or skiffs, shall:
 - (a) Be suitable for conditions where used.
 - (b) Be equipped with oar locks securely attached to gunwales, oars, one boat hook, and one cork ring buoy with fifty feet of suitable line attached.
- (5) Whenever boats or skiffs cannot be used, due to swift currents, life lines close to the water surface shall be provided and, wherever practicable, a line shall be stretched across the stream with tag lines.
- (6) Where workers are transported by boat or barge, only such number of persons shall be carried that can be safely accommodated on fixed seats. Capacity showing number of persons shall be plainly marked on vessel.
- (7) All workers shall be provided with a U.S. Coast Guard approved buoyant life saving device while transported in open boats and/or barges, and where deemed necessary by the department, workers shall wear same while in transport.

[Statutory Authority: Chapter 49.17 RCW. 94-15-096 (Order 94-07), § 296-155-235, filed 7/20/94, effective 9/20/94; Order 74-26, § 296-155-235, filed 5/7/74, effective 6/6/74.]

WAC 296-155-240 Sterilization of protective equipment. Goggles, gloves, respirators and other protectors shall not be interchanged among employees for use unless they have been thoroughly cleaned since last use.

[Order 74-26, § 296-155-240, filed 5/7/74, effective 6/6/74.]